

that it was made by an Indian. Mr. J. W. Foster, in his work on the prehistoric races of the United States, writes that "a wide gap exists in connecting the history of the mound-builders with the present race of Indians." There is a large Indian mound among the mountains in Macon County, North Carolina; and the Cherokee Indians, now living in that vicinity, say that they have no tradition in reference to its construction. Perhaps this copper plate might be looked upon as a connecting link between the mound-builders and the early white settlers in this country, as it was found in conjunction with the skeletons and the stone axe.

*Note on Corundum.*—Mr. WILLCOX said that the corundum crystals presented by him were found at a locality in Laurens County, South Carolina, that had never been described. He lately visited the place. The corundum is found in a matrix of mica slate, which is considered a new rock for bearing corundum. Commencing at a point three-quarters of a mile east of Laurens Court House, the corundum is found at several places in a district about three miles long and one-half mile wide, in a direction nearly north-east. As is the case all through the Southern States, the rocks in Laurens County are so deeply covered with soil that it is difficult to trace them.

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APRIL 30.

Mr. THOMAS MEEHAN, Vice-President, in the chair.

Twenty-eight members present.

A paper entitled "Elements of the Sidereal System," by Jacob Ennis, was presented for publication.

*The Bridging Convolution in the Primates.*—Dr. A. J. PARKER remarked that the *plis de passage* of Gratiolet, the annectant, bridging or transition convolutions of the English anatomists, are small and in many cases concealed convolutions passing from the occipital to the temporal and parietal lobes. Gratiolet attached great importance to these *plis de passage* as points of diagnosis in different brains. He distinguished altogether six of these transition convolutions, four external and two internal. The two internal connect, according to him, that portion of the occipital lobe known as the cuneus, with the mesial portion of the brain directly in front of the parieto-occipital fissure; the so-called lobulus præcuneus of most authors. He called these, respectively, the superior and inferior internal *pli de passage*. The four external *plis de passage* pass from the lateral portion of the occipital lobe to join the convolutions of the parietal and temporal lobes. He named these the first or superior external *pli de pas-*

*sage, deuxième, troisième et quatrième pli de passage externe.* The inferior internal *pli de passage* passes from the apex of the cuneus forward, and joins the convolution running forward into the frontal lobe. Attention was called to this convolution in a previous communication on the convolutions of the negro brain; but it might be well to refer to it again in this connection. It is this convolution which in the Simians separates the mesial portion of the parieto-occipital from the calcarine fissure. The presence of this convolution was considered as a characteristic of the Simian brain, but Huxley pointed out its absence in the brain of *Ateles paniscus*. Bischoff states, however, that it is present in *Ateles*, only pushed down and concealed in the depths of the parieto-occipital fissure. In the brain of *Ateles ater* Dr. Parker had found this convolution as well developed as in any of the Simian brains. Formerly it was considered that this convolution was absent in the brain of man; but Bischoff asserts that it is always present, sunk in the depths of the parieto-occipital fissure, and Ecker describes it under the name of the gyrus cunei. He had always been able to distinguish it in the human brain; and especially well-developed, as previously pointed out, in the brain of the negro.

The superior internal *pli de passage* lies just above the inferior internal, and connects also the occipital lobe with the lobulus præcuneus. Bischoff has asserted (*Die Grosshirnwindungen des Menschen*, etc., *Abhand. der k. bair. Akademie der Wissenschaften*, 1868) that the superior external and the superior internal *plis de passage* are identical. Ecker, opposing Bischoff's interpretation, remarks (note p. 75, *Cerebral Convolutions of Man*) as follows: "Bischoff is of the opinion that this convolution (he is speaking of the superior internal *pli de passage*) is homologous with the first outer transition convolution of Gratiolet, our gyrus occipitalis primus, and hence is wanting where the latter is developed, and vice versa. I regret to be obliged to oppose this view; not only do we find, as I will more particularly describe in another place, in the brain of various apes (*Cercopithecus cynocephalus*, etc.) both convolutions most clearly developed together, but we also not infrequently find in man a convolution which arises at the posterior extremity of the præcuneus with the gyrus occipitalis primus, runs backward in an arch convex inward and downward, while the former (gyrus occipitalis primus), as is known, makes an arch outward. In the cuneus the two convolutions again coalesce. This convolution is regularly sunk into the depths of the fissure parieto-occipitalis, and only becomes visible on pulling apart the borders of this fissure; but sometimes it also comes to the surface, and then causes a very unusual appearance at this part of the cerebral surface."

This disagreement between the observations of Bischoff and Ecker in regard to these convolutions is due to the fact that in

some Simian brains two convolutions are present as described by Ecker, whilst in other brains only one can be distinguished. Thus, in one specimen of the brain of *Macacus nemestrinus*, but a single convolution was present, passing from the lower part of the lobulus præcuneus backwards to join the occipital lobe. This convolution was in shape like the letter S, the anterior arch being directed downwards and inwards, the posterior arch upwards and outwards. The anterior portion of this convolution evidently corresponds to the superior internal *pli de passage*; whilst the posterior arch corresponds to the convolution which Ecker terms the gyrus occipitalis primus, and which Gratiolet and other writers have also separately designated under the name of the superior external *pli de passage*, the superior annectant, bridging, connecting convolution of the English anatomists, Huxley, Turner, Rolleston, and Marshall. He had found the same condition of things in several other brains, specimens of *Macacus cynomolgus*, *Cercopithecus callitrichus*, and in *Cebus apella*. In most brains, however, two convolutions are to be found, an anterior, inwardly arched, and a posterior outwardly arched, corresponding, as had been already stated, with the anterior and posterior portions of what is in some brains a distinct, single, and separate convolution.

With regard to the development and relations of the superior external *pli de passage* considerable confusion exists. This is the convolution, which, lying concealed in most of the Simians under that portion of the occipital lobe known as the operculum, develops in the higher Apes, in Man, and Ateles upwards and divides the fissura perpendicularis into two parts. Until recently only one of these divisions, the parieto-occipital fissure, has been recognized. Thus Marshall, following Gratiolet, in describing the brain of a Bushwoman calls the lateral portion of the parieto-occipital fissure the external perpendicular fissure, thus identifying this with the external perpendicular of the Simian brain. This identification is incorrect, or at least this lateral portion of the parieto-occipital can be considered as corresponding to only a small portion of the external perpendicular fissure. The fissure which represents the external perpendicular is pushed backwards by the development of this convolution, and is found situated apparently on the occipital lobe and continuous with the interparietal fissure. Pansch appears to be the first who gave a correct description and comparison of this portion of the human brain, and he has since been followed by Ecker. Bischoff identifies the internal perpendicular correctly, but he introduces fresh confusion. In the fetus he recognizes the presence of the external perpendicular fissure, but states that it disappears in the eighth month. This, however, is by no means the case. In five fetal brains, at the end of the eighth, Dr. Parker had found this fissure distinct and well-developed, and in all adult brains which he had studied he had found it well marked. In the brain of the fetus, at the end of the

eighth month, this convolution presented almost the same appearance as in the brain of the Orang, according to the figure given by Bisehoff. This convolution, the superior external *pli de passage*, varies as to its extent of development in different individuals. In the brain of the negro he had found it much simpler than in the white. Pansch and Ecker are the only writers who recognize in the human brain the fissure corresponding to the external perpendicular of the Simian. Pansch calls it *fissura occipitalis externa*, and Ecker *fissura occipitalis transversus*. The remaining bridging convolutions present nothing of importance. The second lies generally concealed under the operculum. The third passes forward from the apex of the occipital lobe into the second temporal convolution. The fourth lies below this, and passes into the third temporal convolution.

In identifying and limiting these convolutions in the human brain, much confusion has arisen, and he agreed entirely with Ecker, that, although they may have some significance in the brain of the Apes, they have no special significance in the brain of Man, and should not, therefore, receive separate and distinct names. In the human brain they appear merely as the posterior portions of convolutions which extend into the temporal and parietal lobes and connect these with the occipital lobe.

Dr. Jos. W. Anderson, Walter Wood, and W. W. Frazier were elected members.

The following paper was ordered to be printed:—